

(19)



JAPANESE PATENT OFFICE

(2)

PATENT ABSTRACTS OF JAPAN

(11) Publication number: 61244271 A

(43) Date of publication of application: 30.10.86

(51) Int. Cl

H02M 3/28

(21) Application number: 60086041

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(22) Date of filing: 22.04.85

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(54) SWITCHING REGULATOR

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(57) Abstract:

PURPOSE: To reduce the capacity of a switching element and the cost by limiting the primary side current of a transformer to the prescribed upper limit or lower, and gradually rising the upper limit value from zero immediately after a power source is applied.

CONSTITUTION: A DC power source from input terminals 1, 2 is connected and disconnected through the primary side of a transformer 3 by a switching element 4, and its output is rectified and smoothed by diodes 9, 10, and supplied from output terminals 13, 14 to a load. The DC output is output through an error amplifier 15 to a comparator 18, and a transistor 4 is controlled and stabilized. In this case, a current transformer 25, a rectifier 26, an error amplifier 27, a Zener diode 28, resistors 29, 30, a condenser 31 and a switch 32 are provided. Thus, the condenser 31 is charged when the switch 32 is turned OFF immediately after the power source is applied, and a reference voltage between both ends of the diode 28 gradually rises from zero. Thus, a rush current is suppressed to eliminate the damage of the transistor 4.

